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ABSTRACT

In response to workplace needs, the Colleges of Applied Arts and Technology across Ontario are becoming market-driven learning centers for the 21st century. A significant increase in demand for college education, estimated as a 21% increase in enrollment, will occur due to: (1) a rise in participation rates; (2) demographic changes, particularly the rise in the number of 18- to 24-year olds in the population; and (3) the double cohort of high school graduates resulting from secondary school reform. This paper outlines the opportunities, issues and strategic investment required for the colleges to continue to be even more productive agents of economic growth. Critical recommendations include: (1) developing a new college charter to provide the foundation for continued growth and innovation; (2) moving to a fixed share model funding formula to fund quality, innovation and access; (3) pursuing innovative, quality, market driven programs; and (4) strategically investing current and projected requirements in the areas of staffing, operations, physical plant, capital, quality, and innovation. The colleges plan to establish the necessary task groups to work collaboratively with the government, education partners and current prospective students to develop strategies that ensure colleges continue to be leaders in Ontario's economic development and growth. (JJL)

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ED 431 456

Investing in Ontario's Economic Development

Association of Colleges and Applied Arts and Technology of Ontario

JC 990 373

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EXECUTIVE SUMMARY

The Colleges of Applied Arts and Technology have contributed substantially to economic development in Ontario for over 30 years. Public perception research and expert testimony confirm the importance of the colleges in providing the advanced skills necessary in the knowledge economy

In response to workplace needs, colleges across Ontario are transforming to market-driven learning centres for the 21st Century. A significant increase in demand, projected to be at least 21% rise in enrolment, for college education will occur due to:

- a rise in participation rates due to the increased recognition of college as providing career oriented education and training from which graduates obtain employment (Maclean's, Angus-Reid, Ontario Jobs and Investment Board);
- the demographic changes over the next ten years, specifically increases in the number of 18 to 24-year-olds in the population;
- the double cohort of high school graduates resulting from secondary school reform.

This paper outlines the opportunities, issues and strategic investment required for the colleges to continue to be even more productive agents of economic growth.

Critical conclusions include:

- the development of a 'new college charter' is necessary to provide the foundation for continued growth and innovation;
- the move to a fixed share model funding formula to fund quality, innovation and access is essential;
- the pursuit of innovative, quality, market-driven programs remains integral to the success of the colleges in meeting the economic needs of Ontario;
- a significant investment is required to ensure colleges can respond to the increased demands. The investment strategy must encompass current and projected requirements in the areas of staffing, operations, physical plant, capital, quality and innovation.

The colleges will establish the necessary task groups to work collaboratively with government, educational partners and current and prospective students to develop strategies that ensure colleges continue to be leaders in Ontario's economic development and growth.

1. INTRODUCTION

> *Develop a new "**Charter for Colleges**" for the 21st Century, to take greater advantage of their potential as significant contributors to the economy, by allowing them to be more market-driven and more flexible*
>
> *A Road Map to Prosperity:*
> *Ontario Jobs and Investment Board, March 1999*

The Colleges of Applied Arts and Technology have contributed to social and economic development in Ontario for over 30 years by providing accessible, quality career education and training to over one million adults each year. Colleges prepare job-ready graduates for Ontario's labour market and deliver a proven return on public education investment.

Colleges' economic development contribution is demonstrated through outstanding quality, access, and accountability achievements as shown in recent Key Performance Indicator data (KPI) (Appendix 1). Colleges serve a unique student mix. Approximately 40% of applicants come directly from high school while 60% are either mature students or previous high school graduates (Appendix 2).

The 25 colleges have the potential to further enhance Ontario's economic leadership in the knowledge economy provided certain strategic investments and policy decisions are made by the provincial government.

Challenges for postsecondary education in the 21st Century provide an immediate opportunity for innovation, renewal and transformation. The projected double cohort of secondary students and the support of external bodies such as the *Ontario Jobs and Investment Board* (OJIB) are providing the impetus and the challenge. The rapidly changing marketplace, the explosion of the use of technology, the shifting demographics, and the projected increase in the numbers of learners participating in postsecondary education provide the stimulus to explore creative and novel strategies to continue to provide access to quality education and training programs in the colleges and to continue to promote economic development.

This paper provides an overview of the 1999-2005 increased capacity opportunities, issues and anticipated costs for the colleges, and the actions required to advance a strong college system for Ontario. Two primary themes of this analysis are the need for strategic investment and the need for flexibility to meet market demand. The paper will first outline the opportunities and issues relating to innovative programming, staffing, funding, and capitalization. In order to further enhance economic development, the paper then outlines policy changes and investment required by the colleges.

2. Increasing Postsecondary Capacity in the Next Decade

The issue of double cohort and postsecondary capacity has recently become a policy and planning priority for the Ministry of Education and Training. 'Double cohort' refers to the large group of students graduating from both the revised four-year secondary school curriculum and the "old" five-year secondary curriculum at the same time in the year 2004.

The median target used for colleges' increased enrolment is 30,000 students by the year 2004 due to both the double cohort and an increase of 0.1% in the participation rate. This figure is based on the historic one third/two third college/university split. Even higher enrolment increases are anticipated based on:

- increased profile of colleges (Maclean's, Angus-Reid, KPI);
- increased need for the fast-track re-training that colleges offer;
- lower costs of college programs;
- potential for new postsecondary education models.

To meet the increased demand for college education, the colleges require strategies to ensure appropriate human and infrastructure resources are in place.

3. Opportunities for Innovation

If adequately resourced, colleges will continue to be leaders in education and training innovation. The projected demand creates an unprecedented opportunity for new ways for colleges to deliver the education and training Ontario that needs.

The key principles that guide the development of market-driven academic options are quality, access and learning-centeredness. To ensure quality, market driven programs that prepare a talented and flexible workforce, it is essential to plan for growth and new programs based on market research and to have sufficient time for program and infrastructure development.

Opportunities:

The opportunities presented by the projected increased enrolment and the recognition by the government of the role of education in the development of a "creative, adaptable, skilled workforce" (OJIB) position the college system to:

- Pursue the renewal of the colleges ("a new charter"):
  - Establish for-profit subsidiaries and new partnerships with the private sector;
  - Explore new organizational arrangements between educational partners and business and industry such as polytechnics, college/college, college/university,

college/business;
- pursue degree/applied degree granting status.

- Plan for the development and expansion of new and innovative programs and program delivery modes:
  - examine the program mix within colleges, regions and province-wide;
  - share curriculum and increase joint programming;
  - provide learners with diverse learning options.

- Investigate the feasibility of a province-wide distance education network, building on existing success such as Contact North and Contact South.

- Build on the new secondary school curriculum which, for the first time, will identify colleges as a postsecondary destination.

- Improve transition from school to college through such articulation activities as fast track programs, courses for "at risk" students.

- Increase collaborative programming with universities building on the College University Degree Completion Accord (April 1999), increasing the movement between college and university.

- Provide access to appropriate learning technology.

- Explore expanded scheduling options for students to access programs, such as weekends and summer.

Issues:

Several Issues need to be addressed to enable colleges to continue to lead innovation in Ontario's career education and training. These issues include:

- College status as a Schedule III Crown Agency restricts the activities, flexibility and responsiveness of the colleges and needs to be modified or changed.

- Market research on prospective students' interest regarding program, delivery and scheduling choices is necessary:

- decisions regarding mounting new programs and expansion of existing programs must be based on market need;
- objective data that confirms prospective students willingness to attend programs in the summer and on weekends and their location must be gathered.

- Incentives are required to develop and implement market relevant programs during the two years prior to the double cohort.

- Sufficient capitalization is essential to provide support for the academic initiatives as the double cohort is merely the upward 'bubble' that precedes a major demographic shift.

- The current academic collective agreement limits colleges capacity to respond effectively as market driven learning centres.

- The capacity of business, industry and the public sector to hire the increased number of graduates is a significant question.

- Colleges require the resources to provide state-of-the-art technology in all program areas.

- Costs of alternate modes of delivery, including distance education, and development are high; long-term collaborative planning is necessary.

- Academic support systems that have been reduced due to funding cuts since 1996 are essential and must be renewed particularly when utilizing new modes of delivery.

Ontario's community colleges do a great job of supplying businesses like ours with well-educated and highly skilled labour.

Paul Koenderman, President, Babcock & Wilcox Canada
Featured in 1998 Ontario Budget Speech Document

4. INVESTMENT

Accommodating the 21% increase in enrolment will require investment in program planning and development, capital, staff, physical plant and technology infrastructure.

Opportunities:

With appropriate financial resources, the colleges have the opportunity to:

- plan for growth effectively;
- renew and hire qualified staff to support the new initiatives;
- pursue the change of the current funding mechanism to a fixed-share model of funding with accompanying growth and performance envelopes;
- provide a stable base as well as portions of the grant for KPI outcomes and as government strategic initiatives;
- recognize growth in the Greater Toronto Area, as well as those colleges facing financial difficulties due to regional economic downturns;
- address current and future capital, deferred maintenance and technology infrastructure requirements to provide state-of-the-art educational environment and equipment;
- increase efficiency in the use of space; and
- enhance the teaching/learning environment by providing state of the art technologies for learning

Issues:

- Since 1989, colleges have served 33% more students while government operating grants per student, adjusted for Ontario CPI inflation have dropped 39.3%. Per student funding has decreased from over $5000 to under $3000 during this period (Appendix 3). All resources are strained.
- The funding mechanism must be changed. If it is not, the projected increased enrolment will further erode the funding unit. The current situation with smaller and northern colleges will be exacerbated and colleges in high growth areas will not be adequately resourced.

- Current estimates of province-wide requirements (excluding projected increased enrolments) total $635 million. At the present time, without additional funding for physical infrastructure and learning technology, quality, access, safety and efficiency are at risk.

- There is some available capacity in the system; however, the locations of the available space and the projected student demand do not match.

- There needs to be accommodation made for the additional activities which occur in the colleges such as apprenticeship and contract training.

- Since 1990 the number of faculty has decreased by approximately 25%, while at the same time enrolment and class size have increased (Appendix 3).

- Support staff has been reduced since 1990 (Appendix 3) and is reflected in the KPI results.

- The double cohort enrolment projections could translate into approximately 1,000 new faculty positions. This does not factor in retirement of existing faculty nor the 25% decrease in faculty over the past several years.

- Increase in the technology infrastructure and technologically mediated instruction requires technical support staff retraining and hiring.

- Recruitment of qualified staff is competitive, costly and time consuming and will be occurring at the same time as universities are recruiting.

- Maximum starting salary for faculty is not competitive in the high tech fields.

- Utilization of the physical plant during the summer presents several problems that must be addressed: many buildings are not air conditioned; most maintenance and renovations are carried out in summer; additional staff are required and, depending on the program, recruitment may be difficult.

5. ANTICIPATED COSTS

To ensure the colleges can continue to contribute to Ontario's economic growth and development, significant investment and changes in public policy will be required. Based on preliminary data, a college investment strategy around anticipated costs has been developed. The costing addresses current requirements, staff and related costs, funding, physical capacity and program and professional development. The costs presented are preliminary at this point .

The anticipated costs are grouped in three categories: Incremental Enrolment and Operational Costs, Quality and Enhancement Costs and Physical Plant Costs. Each category features a chart outlining specific items and related costs with a description of underlying assumptions and explanatory notes.

A. Incremental Enrolment and Operational Costs

The following chart demonstrates the incremental increase in enrolment over the next six years and the related increase in the operating grant. It is assumed that the base operating grant would have increased by $122.9 million by the year 2004-05.

1. Enrolment forecasts assume the same mix of diplomas and programs, a participation growth rate of 0.1% per year with the base of 1999-98 participation rate of 13%.
2. The $4,100 represents the operating grant per student based on Total Operating Grant (includes general and specific operating funds) for 1998-99 per FTE. There are no inflation/wage pressures or change in types/mix of programs factored in. These would be expected to be factored in on a yearly basis.
3. It is assumed that average tuition fees will be approximately the same percentage of college funding per year *excluding* any new incremental increases related to double cohort/quality increases.

		98/99 base enrolment	**99-00**	**00-01**	**01-02**	**02-03**	**03-04**	**04-05**
Incremental FT Students over 98/99	1*	136,170	939	2,735	5,458	8,907	18,502	29,968
Operating grant per student	2	$4,100						
Incremental Costs	3*	**136,170**	**$3.8 M**	**$11.2 M**	**$22.4 M**	**$36.5 M**	**$75.9 M**	**$122.9 M**

The colleges recognize and support additional investment in OSAP to ensure students are able to finance their education. The colleges also support the principle that any additional

funds made available be in the form of grants rather than loans to decrease student debt load upon graduation.

B. Quality Enhancement Costs

This category describes the items and related costs that will support the development and implementation of high quality, state-of-the-art programs in the colleges. It is assumed that the base operating grant would increase by $387.5 million by the year 2004, reflecting the sum of the costs in Program Quality Support, Key Performance Indicator Funding and Learning Information Technology.

Current needs based on the colleges existing infrastructure and student enrolment are: Learning Information Technology $140 million and Annual IT replacement $45 million. These costs as well as future requirements are incorporated in the chart.

1. **Program Quality Support**: includes such items as faculty renewal, increased technical support staff, program and professional development.
2. **Key Performance Indicator Funding**: funding phased in at 2%,4%,6% of the general purpose operating grant maturing in 2002-03.
3. **Learning Information Technology**: $140 million reflects the current province-wide requirements, a one-time cost. Annual instructional technology requirements will be distributed among the colleges.
4. **Colleges New Charter**: this amount reflects staffing for research and consultation related to the new charter, implementation plans for the new charter, support for the implementation of the applied degree, degree completion, nursing entry to practice, and college/secondary articulation initiatives.

		1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Program Quality Support	1		$45 M	$90 M	$135 M	$180 M	$225 M
Key Performance Indicators	2		$12.5 M	$25.0 M	$37.5 M	$37.5 M	$37.5 M
Learning Information Technology	3	$140.0 M	$45.0 M	$65.0 M	$85.0 M	$105.0 M	$125.0 M
Colleges New Charter	4	$1.05 M	$1.65 M	$ 2.4 M	$2.65 M	$3.4 M	$3.55 M

C. Physical Plant

This category represents both current and future physical plant needs. Listed here are the four items and related costs required to provide a safe, up-to-date physical plant that will support the increased enrolment and the programs that will be required to serve this group. Current estimates of province-wide requirements total $450 million as follows: Capital $250 million and Deferred Maintenance $200 million. These have been incorporated in the chart. The increase in projected enrolment is 30,000 spaces which is divided into three components: efficient use of space, renovation and new construction. Efficient use of space includes use of existing capacity, use of alternate modes of delivery and increased offerings during spring and summer. The mathematical formula utilized to arrive at the costs is outlined in Table 3.2. The options outlined reflect four different distributions of the 30,000 spaces into the three components (efficient use of space, renovations and new construction).

5 year Capital Requirements

		Option 1*	Option 2*	Option 3*	Option 4*
Cost: Efficient use of space	**1**	0	0	0	0
Cost: Renovation	**2**	$115.4 M	$179.5 M	$107.7 M	$153.9 M
Cost: New Construction	**3**	$277.7 M	$185.1 M	$259.1 M	$158.7 M
Cost: Deferred Maintenance	**4**	$171.1 M	$155.1 M	$173.1 M	$161.5 M
Cost: Current Capital	**5**	$250.0 M	$250.0 M	$250.0 M	$250.0 M
Total		**$814.3 M**	**$769.7 M**	**$790.9 M**	**$724.1 M**
Assumptions **Target: 30,000 increased enrolment**		**# of spaces**	**# of spaces**	**# of spaces**	**# of spaces**
Efficient use of space		7500	9000	9000	12000
Renovation		6750	10500	6300	9000
New Construction		15750	10500	14700	9000

Table 3.1

Capital cost drivers:

1. The spaces allocated to the efficient use of space do not generate any costs.
2. Cost for renovations: assume $1,248/NASM (Net Assignable Space per Metre) It is assumed that a 2 to 1 renovated-to-created-space ratio exists and that in order to

create one additional FTE space through renovation, an area twice as large as the FTE requirement would be affected.

3. Cost for new construction: assume $2,574/NASM.
4. Deferred maintenance - current requirements: $200.million. Deferred maintenance reduction factor: assumes a relationship between renovations and reduced deferred maintenance of 1 to .25 (for every dollar spent in renovations, deferred maintenance is reduced by .25)
5. Current Capital: current requirements identified by the colleges to meet the needs of existing enrolment, and program mix $250. million. Investment in this category may impact the number of projected required spaces.

	Cost/GSF (1)	Sq ft per sq meter (2)	Net to gross ratio (3)	Cost/NASM (1x2x3) (4)	NASM per FTE (5)	Cost per FTE (6)=(4x5) x2R
Renovation	$80*	10.76	1.45	$1248	6.85	$17,097
New	$165*	10.76	1.45	$2574	6.85	$17,632

NASM per FTE based on conversion of 106.95 GSF/ per student colleges average (or 106.95/10.76/1.45=6.85)
Table 3.2

* **Note**: Does not include classroom furniture. The cost of furniture is difficult to project as it depends on the intended use of the space e.g computer lab vs movable stacking type furniture. An estimate would be $4-6 M.

***Preferred Option*:**

Options 2 or 3 are the preferred options of the colleges:

- Although there continues to be concern regarding the ability to accommodate 9,000 spaces through the more efficient utilization of space it is a more realistic than 12,000 for several reasons:
  - Currently the colleges have an enrolment of approximately 18,000 in the spring and summer and building enrolment during these periods will take some time.
  - The demographic projections indicate demand in areas of the province where there is limited if any excess capacity.
  - Effective and high quality alternate modes of delivery take time to develop, market and implement in addition to being costly.
- The choice between higher renovation or construction costs in option 2 and 3 will depend to some extent on the age of the buildings, the program mix desired, and the location of the projected increases in enrolment. It would be preferable to have the flexibility to move between these two lines.

6. SUMMARY

As the year 2000 approaches, the colleges are becoming even more productive agents of economic growth. New tools are necessary, however, for colleges to continue to contribute to provincial prosperity. These tools, while separately listed, are interrelated at the core of college transformation.

Colleges of the 21st Century will face unprecedented growth and opportunities to continue leading economic development across Ontario. The capacity to provide access to the increased number of learners requiring postsecondary education will be essentially through:

- development of a "new charter";
- infrastructure renewal and investment;
- development of a more appropriate funding mechanism;
- new quality education programs and services;
- accessible diverse learning options;
- state-of-the-art learning technology;
- innovative alliances with business and education;
- quality accountability indicators.

The colleges are committed to working with the government, their educational and business partners, and current and prospective students to renew the colleges mandate for the 21st Century. The colleges will continue to provide leadership in learning innovation and in leading economic development across Ontario. The full potential of the colleges can only be realized through strategic investment in our human and physical resources.

Appendix 1

ACCOMPLISHMENTS

Ontario's colleges are a career education and training system that meets the needs of the economy. Colleges' economic development contribution is demonstrated through outstanding quality, access, and accountability achievements:

- Average employment rates for graduates exceed 89% and in many programs reach 100%. As the annual Premier's Awards nominations illustrate, college graduates are building a better Ontario.

- Colleges are respected in over 200 Ontario communities and 74 countries around the world for their business and education partnerships. Large and small business look to the colleges for rapid response to training needs.

- Over 600,000 graduates since 1968 provide testimony to the value of college education and training. New industries are attracted to Ontario because of the availability of a skilled workforce and state-of-the-art training facilities.

- Program quality is guaranteed through provincial program standards. Program advisory committees of employers and educators regularly review curricula to integrate the new skills necessary to adapt to the new knowledge economy.

- Colleges are the accessible link between school and work, serving increasing number of workers upgrading their skills. Prior Learning Assessment and Recognition ensures qualified students reach their education goals quickly.

- Colleges are leading public sector accountability by implementing Key Performance Indicators (KPI) in employer, student and graduate satisfaction, as well as job placement and graduation rates. KPI linkage to funding will be introduced in 2002-2001.

- Community-based boards have ensured public sector accountability through quality improvement processes for over 30 years.

- Colleges have been partners with the secondary system to develop innovative articulation programs and are currently involved in the School/College/Work Initiative which is designed to improve transition from school to college.

- Articulation with universities has been a high priority with colleges. The Ontario Colleges-University Degree Completion Accord will be instrumental in expanding articulation opportunities in the province.

- Colleges are a sound economic investment. Since 1990 colleges have served 33% more students while government operating grants per student, adjusted for Ontario CPI inflation have dropped 39.3%.

Appendix 2

OUR LEARNERS

Colleges serve a diverse group of individuals, creating a unique student mix. In 1998, and consistent with 1996 and 1997 application data, approximately 60% of applicants indicated on their application that they were either previous high school graduates or mature students. The remaining 40% applied directly from secondary school.

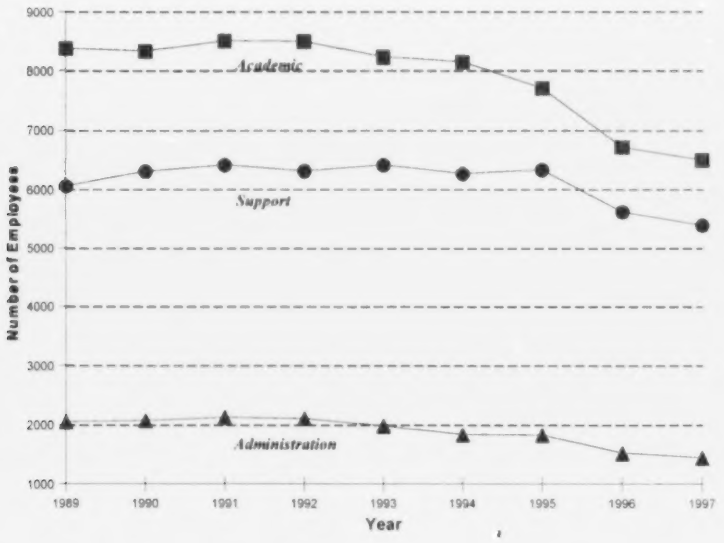
Aspects of **learners profile** which must be considered in planning for college programs and growth Include:

- Almost 50% of college enrolment is comprised of first-year students.
- A high percentage of the students are carrying multiple responsibilities, with almost double the number of sole support and married students than universities.
- There is high dependence on student support systems, over 55% receive financial aid and 10% receive special needs assistance.
- Many are unable to relocate.
- The average student age is 26.
- Colleges provide learning opportunities to students representing over 50 cultures with varied backgrounds.
- Some colleges report that 15% of their students are single parents. Access to day care is a critical matter in facilitating study for this very significant population, typically women, for whom the development of employability skills is critical to their future as a contributing member of the economy and to raising that child above the poverty line.
- The colleges tend to attract a significant number of learning disabled and a representative share of the physically challenged population. Services for these groups have tended to be stressed during the past several years and require financial support to meet the provinces "equal opportunity" goals.

The **Key Performance Indicators** (KPI) project shows, that system wide:

- 89% of recent college graduates obtain employment within 6 months of graduation;
- 80% of employers were satisfied with the quality of the educational preparation of college grads, 17% were neutral (neither satisfied nor dissatisfied) and 3% were dissatisfied;
- 81% of students surveyed were satisfied that their programs provide them with experiences that will be useful in their future employment; 14% were neutral; 6% were dissatisfied.

Appendix 3
Full-time Staff in Ontario Colleges 1989-1997



Full-time Postsecondary Enrolment & the General Purpose Operating Grant